THE

VETERINARY JOURNAL

Editor :

FREDERICK HOBDAY, C.M.G., F.R.C.V.S., F.R.S.E.,

HONORARY VETERINARY SURGEON TO HIS MAJESTY THE KING.

OFFICIER DU MERITE AGRICOLE (FRANCE).

CAVALIERE DEI S. S. MAURIZIO E LAZZARO (ITALY).

HONORARY MEMBER OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION.

AND FORMERLY PROFESSOR IN THE ROYAL VETERINARY COLLEGE, LONDON.

Sub-Editor :

GLADSTONE MAYALL, M.R.C.V.S.

APRIL, 1921.

Editorials.

THE OLD HORSE TRAFFIC AGAIN.

ALTHOUGH nothing like the terrible disgrace to Great Britain and the scandal to civilisation that it was some years ago, the "old horse" traffic has again assumed very large proportions, sufficient to induce the daily Press to take up its case and expose its horrors and deficiencies.

The average Britisher loves all animals, especially his horse, and it is only gross ignorance of the cruel treatment it may receive which causes him to sell his old friend and faithful servant to be sent alive across the Channel to be slaughtered in the abattoirs of the Continent; or, worse still, to be resold there for work and slavery such as is not understood (and would not be allowed) in Great Britain.

It is a subject which requires careful handling from every point of view, as no one wishes the adoption of such harsh measures as will prevent such a legitimate traffic as the sale of English horses to the Continent; but what one does wish for is that we shall have the certain knowledge that our horses, who have given faithful service, shall live their declining years in comfort and be assured of a painless end.

It is true that, by the Orders of the Ministry of Agriculture, a veterinary inspector is stationed at every horse embarkation port, with instructions to pass nothing which could not be certified as fit for work in England, and this Order has been of wonderful service;

in fact it may be said to have struck the deathblow to what was known in Antwerp as "England's Shame"—viz., decrepit horse traffic.

A way has recently been discovered for the evasion of the Order by certain cunning, low class dealers, who sent the horses to the Channel Islands, and from there to France, without veterinary inspection of any kind, the laws of the Channel Islands not having been affected by the Order of the Ministry of Agriculture.

That, however, is now altered, and these dealers have been checkmated in this, all animals despatched from the Channel Islands in future having to be inspected and certified "as fit for work in England," as in the case at all other ports. When once the horse is dead the question of the disposal of the meat is purely one of sentiment, and it would be stupid of an Englishman to object to any of his Continental neighbours because they eat horseflesh and he devotes it to less useful and economical purposes. Horseflesh is excellent for human food, and it is often prescribed as an article of diet in the treatment of certain diseases by medical men. In some countries it is more prized than cow beef, and during the war on many occasions fetched a higher price. When, therefore, a young colt meets with an accident which necessitates its destruction, or an old horse has to be destroyed, the flesh is there (if death has been painlessly and properly inflicted) for disposal, and this should be done in the most economical manner possible for the benefit of the community.

At present there is a vast difference in price between the flesh of the horse which has been killed on the Continent and the flesh of the horse killed here—and this is the real inducement which causes the animals to be sent across alive.

What, then, are the objections of the British public to their being shipped across alive? They are two-fold. One is that they are killed by the hammer, pole-axe or knife, and that many of them are not killed at the first attempt. Were they compulsorily killed with the humane killer the matter would be different, for even in the hands of an amateur this instrument, properly applied, never fails to administer instantaneous unconsciousness to its victim. The second objection is that every now and again a vessel gets caught in a storm, or in rough weather, and on these occasions one gets gruesome reports as to the arrival of vessels with many animals severely injured (fractured limbs and wounded bodies), and the deck like a shambles.

These unpleasant contingencies could be avoided if our Continental friends would appoint veterinary inspectors on this side to supervise the killing and subsequent inspection and stamping of the flesh, agreeing at the same time to give whatever is the market price on

arrival over there. France has now come into line, and some eighteen British Veterinary Surgeons have been appointed to inspect the carcases on this side. Let us hope that the Belgian Government will see their way to do likewise.

PRELIMINARY UNIVERSITY TRAINING AND RURAL ENVIRONMENT FOR OUR VETERINARY COLLEGES.

In a recent Presidential Address to the Central Veterinary Medical Association—an address replete with constructive and wholesome criticism—one of the main points brought forward was that of the expediency of the establishment of our schools of teaching in an agricultural and rural environment rather than their maintenance amid the artificial conditions of animal life obtaining in great cities.

The President, General Sir L. Blenkinsop, in urging its acceptance, sought to establish this principle rather than to attempt to indicate the means of its achievement. We venture to think there will be few of us inclined to differ with his views on this subject.

Apart from considerations of ways and means, there seems nothing to urge against the expediency of establishing our teaching schools amid surroundings natural and appropriate to the animals with which we have to deal, for it is only in such manner that we can establish and demonstrate the normal standards of health, type, and condition, upon which all our subsequent professional structure of successful animal management and veterinary treatment must be based.

The town horse is rapidly becoming displaced before the ever-increasing uses of the mechanically-driven vehicle, and with the disappearance of "the noble animal" will also disappear the chief surviving reason for the maintenance of the teaching school in the city. If modern breeding principles can evolve the Pegasus able to compete in flying with the airplane and costing less in corn than the latter in petrol, perhaps our old friend the horse will hold his own; otherwise he seems likely—in the town at least—to go the way of the Hipparion and his other forebears.

When Saiutbel in 1792, urged by the farmers of the Odiham Agricultural Association, established the Royal Veterinary College in Camden Town conditions were different. The site chosen for the veterinary school was, if not in the heart of the country, at least a considerable distance from the heart of the town, and the pack horse, the coach horse, and the roadster were upon every highway and byway, forming an essential feature of the life of the people. One, too, greatly outweighing, from an economic aspect, the importance of the ox or sheep, which latter were rarely of such individual value as to demand the services of the veterinarian. The horse was the one animal

of importance, and, as all roads led the horse to London, it was reasonable to establish the first school for his study at this all-converging point. Accordingly, on March 22, 1792, a meeting of our professional forebears took place under the presidency of His Grace the Duke of Northumberland—a name even to the present day associated with leadership both in arms and the gentler arts—at which meeting it was resolved "That a temporary stabling for fifty horses and a forge house for shoeing should be built on a piece of ground near Pancras."

Time and circumstance, however, have altered the claims of "Pancras" as the most suitable locality for our teaching school, for the progressive disuse and diminishing numbers of the horse have given place—particularly within the last few years—to considerations forcing into prominence the economic claims of the ox, sheep and pig; animals more essentially rural in their habits and environment than the horse.

It seems a natural conclusion, therefore, if we are to teach our students in the field of nature from the normal as well as the pathological type, that we should arrange for the study of our subjects in their natural environment rather than invert the process in the attempt to "bring the mountain to Mahommed," as we do under our present system of drawing an inadequate teaching material from its normal rural environment and endeavouring to adapt it to the purposes of tuition in the great cities.

They seem to arrange matters better in other countries, both in our own Dominions and in America, for in their universities our profession is accorded its place as one of the learned faculties, and adequate provision is made for the study in a natural environment of all the domestic animals. In problems of animal nutrition and such kindred matters essentially veterinary we have in this country almost completely surrendered our place to others—a fact which reflects as much upon our teaching methods as upon our faulty environment—the one naturally reacting upon the other. Even the most hardened advocate of the system of city education will hardly support the claim that the economics of beef or wool production are best dealt with in the crowded city, or that the principles of profitable pig rearing, or the dynamics of the horse at work, are taught to the best advantage under present conditions; and it is in questions of preventive medicine and general hygiene that the opinion of the veterinarian ought to be acknowledged to be pre-eminent.

In some ways they do these things better in the United States, and we have excellent illustrations both in Cornell (New York State) and in the Ohio State University, U.S.A. In each instance—in a large university of several thousand undergraduates—the veterinary student

is adequately provided for in the College of Veterinary Medicine under the administration of its own Dean and College Faculty. *A high degree of general education is necessary at matriculation on a strict parity with the general standard of education required from students entering the other colleges of law, medicine, engineering, etc.* In this way the American university veterinary student starts his college career from the same platform as his medical and legal brother, and so escapes some of the discriminations and invidious distinctions which—under our lower standard of entrance examination—we encounter from time to time in this country.

A four years' course of intensive study follows in all the subjects found in our own curriculum, the student being, in addition, obliged by the law of the State to become an efficient soldier, with all the attendant advantages of the gymnasium and parade-ground training. Such subjects as dairying and animal husbandry form an important part of the third and fourth year courses, and in this way, and amid suitable surroundings, knowledge is acquired of such subjects as " Types and Breeds of Livestock," " Foods and Feeding," " Horse-shoeing," etc., while veterinary jurisprudence and meat inspection fall also within the final year's tuition.

The general impression left upon the mind after studying the detailed synopsis of the four years' course of instruction in either of these American universities is that we in Great Britain have something to learn and much to emulate.

While the technical side of the college training is thorough and comprehensive, and such as enables the graduate to hold his own with medical men in matters scientific, the advantages of skilled instruction in matters of breeding and show-judging enable him from the first to establish his value with the agriculturist, general and broad attainments which are enhanced by the social and physical requirements of university life.

With the question of the expediency of establishing Chairs of Veterinary Medicine at our home universities we are not attempting to deal here, but all must admit the essential advantages of the high standard of general education if we aspire to and would hold our place among the other learned professions. Equally obvious is it that the obsolete methods of yesterday will—unless cast aside in favour of modern methods—inevitably result in our inclusion in the list of "also rans." An antiquated and unsuitable environment for our teaching schools will stultify the best efforts of the best teacher, so that with the passing of the horse, and the increasing value and importance of the study of farm stock, it behoves our authorities to seek, "fresh fields and pastures new."

Biography.

A SKETCH OF THE PAST WORK OF LT.-COL. WATKINS-PITCHFORD, C.M.G., F.R.C.V.S.

By One who knows the Worker.

The recent appearance of South African newspaper opinion in the columns of the Veterinary Journal, and the findings of the Union Senate with reference to Col. Pitchford's past work, have led me, as one having first-hand knowledge, and encouraged by the request of mutual friends, to attempt the following short sketch.

We are familiar with a certain trade advertisement depicting a colossal gas-mantle addressing a British sailor returning from the war with the words "We've both made a good name with the expenditure of very little gas," a sentiment which both points the moral and adorns the tale of the writer in the following effort to sketch briefly the career of a member of the veterinary profession, the practical results of whose work during the past twenty years have, through want of "gas," remained almost unknown, although probably equalling the efforts of any other contemporary or past worker in the same field.

If the subject of this sketch had loved the limelight equally with some of his co-workers there would be no point in the penning of these lines. Distrust of premature conclusions and a dislike of the publicity so essential nowadays to success have operated in the present case to hide the worker's light under a bushel, a result which has been rendered perhaps the more inevitable by a reluctance on his part—after achieving the main result—to spend further valuable time and effort in contesting the claims to priority of subsequent workers, or of endeavouring to countermine rival influences at belittlement.

To have devised the means of bringing under control two of the deadliest animal diseases known is no mean achievement for one worker, but this record by no means completes the tale of Pitchford's successes in the domain of preventive medicine. Scientists of the first rank, such as Prof. Koch and others, had long attempted and finally failed, to devise practical systems of repression for the devastating diseases Horse-sickness, Rinderpest, and the no less deadly disease East Coast Fever. Pitchford showed how the first could be prevented and the two latter successfully and practically eradicated by systems which are in use to-day, systems which have saved in the aggregate the lives of millions of animals.

Writers of personal sketches are, for the sake of effect, prone to the use of too vivid high-lights on the one hand, or too deep shades on the other, exaggerations which it is difficult to avoid where bias,

either *pro* or *con*, influences the pen. In referring to "millions," therefore, the writer would wish to avoid hyperbole and leave facts and figures to speak for themselves.

That the loss of horned stock in the South African visitation of Rinderpest in 1896 amounted to many millions was shown by official statistics, and this figure is, of course, but a small fraction of the past toll exacted from animal life in other parts of the world. Rinderpest is now no longer the most malignant of animal scourges, but a manageable disease whose ravages belong to past history. The use of an immune serum—so obvious a line of thought to us nowadays—was then in its infancy, and was restricted to the cure of diphtheria and tetanus only. Within a few months of his arrival in South Africa, months of tense application to the problem, and in direct rivalry with Prof. Koch, Pitchford in the North of the Transvaal, working part of the time with Theiler, had evolved and placed on a working basis the system of serum prevention which is now with hardly any modification the recognised method for the control of this disease throughout the world, the herds of which it had previously scourged since the time of Moses.

The Natal Parliament passed a vote of thanks to the worker, and later the Premier of the Colony stated to the House "that the Government might be trusted, and would not fail when the time came to recognise the great value of the services rendered," etc. But the "time" never came, and Pitchford's friends had much difficulty, some years later, to induce the Government to appoint a Commission of Enquiry to investigate the priority of his work and rescue it from the many—chiefly foreign—claimants which had arisen. The findings of this enquiry established for all time the prior claim of the worker, and re-stated the opinion that the greatest praise was due to the investigator for his brilliant work, conducted often in circumstances of much hardship and difficulty, work the value of which was so great as to merit public recognition.

Such official vindication was all the worker himself expected or hoped for.

The next disease, investigated some years later, the disease which Koch named East Coast Fever, presented somewhat similar features, in so far, at least, as the deadly nature of the malady was concerned, and from the fact that the same three workers (Koch, Pitchford and Theiler) were concerned in the attempt to elucidate the problem, each working separately on different principles. Here also the disease numbered its victims, direct and indirect, by the million, "quickly spreading southward and leaving devastation and ruin to cattle-owners in its wake," as the recent Select Committee of Senators of the Union

ALABAMA POLYTECHNIC INSTITUTE

Parliament have said in the findings of their report on this disease and its treatment.

The odds, however, were all against Pitchford in this work of enquiry, for the world-famed Koch and his assistants, specially imported from Berlin at great cost, naturally had at command the fullest modern facilities, while Theiler of the Transvaal, with his magnificently equipped laboratory and ample means and staff, " carried all the guns," so-to-speak, in comparison with Pitchford. The latter scientist had to work almost alone in Natal, with such meagre official support that, to ensure economy, he himself had even to assist in the manual work of constructing his dipping tank, an appliance which was destined to give the key to the problem sought, viz., that of the effective suppression of this devastating plague. How he succeeded in solving the problem with the limited resources at his command cannot be told here. A public man, himself an American scientist of note, has referred to the various reports on this subject published by Pitchford over a period of some years as " a monument of laborious research crowned by a brilliant victory."

Although this effort also received the unanimous thanks of the Natal Legislature and many agricultural and other societies, the work itself, as with the previous efforts of the worker, rapidly became so buried under the indifference—or worse—of officialism and its advisers, as to lie unrecognised and unapproved for many years, a state of official torpor which was naturally taken advantage of by the tick which spread the disease, and which, unhappily for South Africa, worked even out of " government hours." The late report of the Senate Committee referred to above, in animadverting upon the policy adopted by the authorities for the repression of the disease, speaks of the " loss of herds, large and small, to such an extent that the northern districts of the Transvaal became almost denuded of cattle," and this Commission, in summing up its mass of evidence taken from the practical experience of many cattle owners, stated that independent enquiry had served to prove that Pitchford's theory was the correct one, and said that " the outstanding evidence of the enquiry " furnished overwhelming proof of the efficacy of the system recommended by Col. Pitchford as the only means to the eradication of the disease."

And so, years after the work was accomplished, another Parliamentary Enquiry endorsed the scientist's efforts in another disease investigation. It is no exaggeration to speak of the practical results of this latter work as bringing about the saving of millions of animal lives and tens of millions of pounds in money value. In ways such as these are the real destinies of a country influenced !

A double success comes to only a few disease investigators, and such are fortunate above their fellows. The tale is not yet told, however, for the three workers previously mentioned attempted the solution of yet another great South African disease, that of Horse-sickness, the cause of the loss in bad seasons of thousands of horses, and in some recorded seasons of tens of thousands. Probably no more baffling disease has ever confronted the investigator, and we still lack a complete and satisfactory solution of the problem. Theiler has done much in the prophylaxis of the disease on the sero-logical side, the possibilities of which line of enquiry had been outlined previously by Edington and later by Koch. Pitchford, however, was able to show the manner in which the disease was contracted, and, as an outcome, to devise a system of protection which has been employed widely over the whole of South Africa with the best practical results. In fact, the essential necessity of a *practical application* has been kept steadily in view in all the investigations of this worker, and the voluminous and technical post-mortem reports and redundant clinical records found adorning—or distending—the reports of other investigators, find no place in Pitchford's recorded work other than to elucidate a point or justify a finding.

Among other minor enquiries by the same worker was an investigation into the alleged possibility of the transmission of the bubonic plague by domesticated animals, a theory causing much controversy at the time in scientific circles. Pitchford's negative findings have since been confirmed by the Indian Plague Commission. A study of the venoms of the various South African snakes led to the production of a polyvalent serum—the first of its kind—which has proved of much use against snake-bite from the snakes of the sub-continent, and in connection with this work a special form of syringe-bottle was devised making the antidote and the instrument for its use inseparable and—a most important point in snake-bite—instantly available. But there is no room here to describe all the smaller enquiries and lines of work undertaken during some 17 years' strenuous work in South Africa. The list below, however, serves to show some of the activities of the scientist who, with no time or inclination to " nibble the ear of authority," or involve his energies in the racial and political elements surrounding him, gave of his best to the State he had engaged to serve—after the manner of the British Civil Servant.

It is not the place here to speak of the causes which forced a man so ripe in past experience and replete with future promise to leave the country he had served so ably ; suffice it to state that the scientific worker, on retirement, was accorded merely the minimum retiring allowance the State provided—an amount considerably less than the

retiring allowance granted to some of the lay staff of the same department who performed purely clerical duties and were retired about the same time.

Væ victis has too often in the past records of the British Civil Servant become *Væ victor*, and if necessary to the maintenance of Empire, Britons must pass their own children through the fire to the Moloch of political expediency.

"Your investigations and discoveries have been of great benefit to South Africa," wrote the South African Premier (Gen. Botha) when expressing his regret to Col. Pitchford on his departure. Similarly Emperors of Japan have been wont to send polite messages—accompanied with a bowstring—to subjects whose continued existence was inconvenient!

The Natal House of Representatives, agricultural unions, and corporations, etc., passed resolutions of eulogium and thanks to the departing veterinarian. At the annual conference of agriculturists, holding its session at the Town Hall at Pietermaritzburg at the time of Col. Pitchford's departure, the ordinary business of the conference was suspended while the following resolution was adopted with applause :—

> "This Conference desires to place on record its appreciation of the services rendered to this country by Lt.-Col. Pitchford, F.R.C.V.S., in the scientific and practical work he has accomplished. It considers the work done by him in the last 16 years has not only greatly benefited South Africa, but will in the future benefit agriculturists in all parts of the world, and it feels that while South Africa has had the opportunity of following the work done, the value of his services and the utility of his researches may not be widely known outside this continent. It is therefore hereby resolved that this resolution be forwarded to the Government of the Union of South Africa, with the request that it may be brought directly to the notice of the Secretary of State for the Colonies."

Our own Colonial Office, however (which presumably seeks its advice in matters veterinary from another Department of the State), has so far failed to consider the resolution of sufficient importance even to convey its terms to the person most concerned, and the only record of the matter will be found in newspaper reports.

The reflections which such an official attitude raises in the mind are not calculated to inspire the young and ambitious veterinarian with colonial aspirations. Those of greater experience and maturer years, however, will incline to the opinion that the satisfaction of important work successfully accomplished outweighs in the end the

satisfaction attending publicity and official recognition. The view of the writer is that a man's work, if of a public nature, should be made public in its results—whether of success or failure—for his friends and his profession have a claim in his successes, while his failures may prove to others as the buoy to the sunken wreck.

The foregoing has been compiled entirely from newspaper cuttings and official reports, and no unattested fact has been included. While this *resumé* has essayed to deal only with the official side of the worker's life, such sketch would, perhaps, be wanting in balance if it omitted mention of activities in directions other than those of the veterinarian and official. Science is too jealous a mistress to allow her votaries to follow other quests too ardently, but in the realm of fiction-writing some of Col. Pitchford's earlier literary efforts were attended with sufficient success to induce his publishers (Ward, Lock) to place several editions of one at least of his works before the public, while his pen has often been employed on subjects widely apart from those of a technical nature. A range of dietetic and pharmaceutical preparations of the most varied character (depending upon the employment of one of Col. Pitchford's patents for the production of a form of artificially digested proteid matter) has of late years been devised and perfected, and promises to come before the public prominently at no distant date. Medical and analytical authorities and the press generally have endorsed the unusual dietetic claims, while the clinical evidence as to a practical utility grows daily.

Such things, however, form no part of the work of the scientist in the larger and more important field of disease-repression which has formed so large a part of his life's work. My intention has been to deal with such matters only in the hope of rescuing some of his official work from the forgetfulness which so readily covers a man's efforts, and especially the efforts of a man who—whatever his accomplishments with other instruments—has in the past shown great lack of capacity to blow his own trumpet. "PALMAM QUI MERUIT FERAT."

EXTRACT FROM THE "NATAL WITNESS," APRIL, 1912.

Some of Col. Pitchford's more recent observations include:—

"The Efficacy of various Disinfectants."
"Natal Snake Venoms and their Action."
"Observations on the Mark VI Service Bullet."
"Copper and its Salts in the Purification of Water."
"Observations on the Bacteriology of Bubonic Plague."
"The South African Disease of Sheep known as 'Blue-tongue.'"
"Observations on the Mark V and sundry patent bullets."
"An Enquiry into the Efficacy of Cattle Dips, etc."
"A Report on Dipping and Tick-destruction."
"The Conformation of the South African Remount."
"The Saddle from the Horse's point of view."
"South African Defence Problems." Etc., etc.

The above form but a small part of articles and publications appearing from time to time in the scientific and public press.

The following is a list of devices, etc., recently brought forward by Col: Pitchford :—

A mechanical compressed-air device for spraying live stock, known as the Natal Spray-pen.
A simple form of Hæglobinometer for clinical use.
An Anti-toxic Syringe for Anti-venomous Serum.
A form of Concentrated Ration for Military use.
A Clinical Blood-tube for estimation of blood cells.
A patent Pack-saddle.
A new design of Veterinary Pannier.
A device for the rapid distribution of anmmunition.
A Water-carrier, Filter, and Purifier combined for Colonial and Tropica use, etc., etc.

General Articles.

THE BREEDING OF SHEEP, LLAMA AND ALPACA IN PERU, WITH A VIEW TO SUPPLYING IMPROVED RAW MATERIAL TO THE TEXTILE TRADES.*

By Colonel ROBERT J. STORDY, C.B.E., D.S.O., F.R.C.V.S.
Arequipa, Peru.

With the mention of Peru there are conjured up in the mind visions of unbounded wealth, mystery and fable ; such wealth that the " pots and pans and kitchen vessels were of gold or plate," and such mystery and fable as hides from our ken the origin and civilisation of the great Incaic dynasty.

It is not, however, with the mysterious and fabulous that I wish to deal to-night, but rather with the development of those vast pampa lands which lie between the Cordilleras of the Andes, a development which, so far as I can gather, has never received the attention which its potentialities demand.

Peru, in fact, has never possessed any particular reputation as a stock raising country, and before I left London last year to visit Peru, I was unable to obtain any reliable data as to its possibilities in this direction.

A sojourn of six months in the Republic, during which time I travelled over the entire length of the Southern Railway and visited the vast tracks of country adjacent thereto, enables me to state that the stock industry of Peru, if developed along sound and progressive lines, should prove to be the principal industry of the Southern portion of the Republic. With the advancement of this industry, other avenues of trade will be opened up, and the lands of both Sierra and Cordillera, now sparsely inhabited, become centres of prosperity and wealth.

In pre-hispanic days, the Incas knew naught of horse, mule, ox nor sheep, and it was not until 1532 that importations of the domestic animals of Europe were made by the Spanish. From then until now the

*Abstract from a Paper read before the Royal Society of Arts.

introductions of fresh strains of blood have been few and far between, with the result that the once pure-blooded Spanish Merino sheep presents a woefully degenerate picture, so degenerate that the live weight of a full-mouthed sheep—a sheep of four years old—turns the scale at 40 to 45 lbs., produces a fleece of 1 to 1½ lbs., and yields a dressed carcase averaging 25 lbs. in weight.

With ease the Indian flockmaster slings a sheep on his back to transport it from place to place ; it would be a matter of some surprise were he called upon to carry some of our early lambs to the Smithfield Market.

Apart from the in-breeding, which is the main cause of this retrogression, altitude tends to dwarf the species, and, to keep flocks up to a good standard, the frequent introduction of robust stud animals is essential.

The flock increase, too, is materially affected in the Peruvian highlands, and among the flocks of the natives an increase of only 40 to 45 per cent. is recorded.

Degeneracy, haphazard breeding, want of care and an entire absence of animal management cannot be held to improve matters in this direction.

The wool industry, as one might imagine from what has already been stated, is also in a primitive state of development.

During shearing operations the sheep's four feet are bound together as if it were some cloven-hoofed monster ; in place of shears a knife is used, but, should the knife prove blunt, then a piece of glass suffices. Notwithstanding these crude methods, considerable quantities of wool find their way to the world's markets from Southern Peru, and the wool from the degenerate Peruvian Merino possesses qualities which merit attention and which prove that it is capable of rapid improvement by judicious selection and breeding.

Generally speaking, the climatic conditions of the regions that I have inspected are *prima facie* favourable to the breeding of sheep, as is evident from the fact that sheep have existed there since the middle of the 16th century, and to-day there are approximately 6,000,000 head in the Puno Department of Southern Peru.

Peru, for the present at any rate, cannot hope to compete in the mutton markets of the world, and as the demand for frozen meat grows annually greater, sheep farmers have been encouraged to cross their fine-fleeced Merinos with the carcase-producing English breeds, resulting in a cross-bred wool which, while eminently useful, has to a great extent, lost its fineness and soft handle. Thus the quantity of fine wool grows less and less year by year. The conditions obtained on the Andean table-lands are eminently suited for the production

of fine wool, the pasture lands are free of burrs, grass seeds, and other vegetable impurities which militate against sheep farmers in other parts of the world, and which necessitate the application of the expensive carbonising process with its attendant deleterious effects.

Above all, there is an absence of non-preventable disease in the regions of the Sierre and Cordillera, and the Government, under its able and progressive President, is adopting measures to prevent its introduction: as an earnest of those endeavours two experienced members of our Royal College of Veterinary Surgeons are being appointed for service at the Ports of Callao and Mollendo.

The Government of the Republic is fully alive to the advantages which will accrue to the State from the development of its wool and hair industry, and a model sheep farm is about to be established where up-to-date methods of sheep husbandry will be demonstrated, and pure and graded stud animals reared and distributed.

With this in view, a number of Scotch shepherds are about to proceed to Peru, taking with them stud animals of excellent quality purchased from well-known breeders of this country, and a number of Ramboullet rams from the National stud fold of France.

We now turn to a short discussion of the wonderful indigenous hair-bearing animals of Peru, the llama (*ilyama*), alpaca, guanaco (*wanaco*) and vicuna (*vicunya*).

These animals are little known to commerce, and are really little known outside of the Andean uplands of South America.

The aborigines of Peru, according to Garcilasso, looked upon the llama and alpaca as a present from heaven without which they could neither subsist, trade nor travel. In the 12th Century it is said they adored the white alpaca as their principal and presiding deity, offering unto him sacrifice.

In ancient days, the llama and alpaca formed the main meat supply of the Inca population; on the backs of the llama—for the alpaca is never used for transport, but herded in flocks—gold, silver, copper and merchandise were transported over the rough winding pathways of the impenetrable Andes, and its coarse hair supplied the lower classes with the raw material from which they wove their vestments and blankets; even the dried dung of the llama and alpaca provided the only available fuel in those barren regions.

It is a scientific fact that the more poorly a sheep is fed, the finer wool it produces, a truism which finds ample confirmation when one sees fine-fleeced herds of vicuña grazing on the apparently barren slopes of the Andean range.

All members of the species grouse and grumble when handled, and when really angry, spit with unpleasant accuracy. The ejecta really

consists of a regurgitation of moist cud, which is violently blown from both mouth and nostrils, covering one with green, acidulous, semi-digested food. The wild guanaco and vicuña are more prone to express resentment in this way than the domesticated alpaca and llama.

The llama is solemn, slow and majestic in motion. The male animal is only used for transport, and is put to work when about three years old. Small packs are used at first, the maximum load of 100 lbs. only being carried when the Indian considers the animal old and strong enough to do so. The baggage llama with its 100 lbs. pack can cover 1½ miles per hour, and a distance of from 12 to 15 miles per day.

The fleece of the llama is thick and coarse, the neck is well covered, but the throat is devoid of long hair ; the fleece, terminating abruptly along the bottom line of the trunk, has a staple of from 10 to 12 inches in length, and is used principally in the manufacture of sacks and coarse blankets.

The average weight of the llama is 250 lbs., and it has a life of from 10 to 14 years. The young llama is born into the world during the months of February and March, at a time when the elements of the Cordillera are stormy and bleak, and as little or nothing is done for its protection, there is a mortality which could be greatly reduced were simple animal management observed. The llama carries its young for a period of eleven months, and usually only bears one at a time.

The alpaca is herded in flocks and is driven into stone kraals for shearing. The same haphazard measures as those adopted for sheep are used for the breeding of this valuable animal, and much is yet to be done by selection to breed animals true to type. A cross-breed between the alpaca and the llama has resulted in the production of a hair of good length, lustre and fineness (huarizo), but whether this cross species will create a second generation is yet to be determined. The "suri" type of alpaca, an animal with a distinct curl along the entire length of the hair fibre, is much sought after by the Indian, and is in demand by Leeds and Bradford spinners, for with this naturally curled fibre, cloth of rarity and artistic finish can be manufactured.

The hair of the alpaca is of remarkable fineness and lustre, and there is a variety of colours ranging from white through blue-grey, fawn, and orange to dark brown. These colours show abnormal fastness to light and fastness to milling and finishing operations, and Professor Barker, the eminent authority, states that there is a great future for its use in the manufacture of fabrics for Indian and tropical wear.

There has also been a marked development in the hosiers trade in natural coloured alpaca yarns, and in view of this expansion and the

demand for a soft handling fabric, the future prospects for raw alpaca are particularly encouraging.

The annual importation of hair into the United Kingdom from South America amounts to approximately 5,000,000 lbs., of which Peru supplies 3,000,000 to 4,000,000, but until the factories of England can anticipate vastly increased supplies, no new avenues of trade can be opened.

The guanaco is the larger of the two—is russet brown in colour with an overmantle of long coarse hair of slightly darker hue. The guanaco inhabits the highest altitudes and is found in greater numbers in Bolivia than in Peru.

It has never been domesticated, nor has it been used for cross breeding purposes.

The vicuna is antelope-like in shape, and both in appearance, colour and movement, recalls the Gerenuk (Walleris gazelle) of Eastern Africa.

The hair of the vicuna is extremely valuable. It is more estimable than the down of the Canadian beaver or the fleece of the Syrian goat; indeed, it is so valued in commerce that numerous fabrics are to be found labelled Vicuna whose composition consists of nearly all the known raw materials except that from which it takes its name.

The vicuna is exceedingly tractable, and during recent years a few Peruvian farmers have reclaimed it from a state of nature and used if for cross breeding with the alpaca, resulting in the production of a hair which for softness of handle and fineness of fibre will be very difficult to equal. A sample of this beautiful product is exhibited here to-night.

With a view to supplying improved raw material to the textile trades—a material which can only be produced in the Andean regions of Peru and Bolivia—steps are now being taken to farm those valuable hair-bearing animals along proper and scientific lines, and by a process of selection, judicious breeding, and the application of animal management, to retain and enhance the good qualities which they possess, while eliminating those which are deficient or defective, and by a system of cross breeding endeavour to produce a hair of even greater intrinsic value. In short, to place on the market a raw material, sound in staple, of good lustre, soft handle and of standardised length

Clinical.

TREATMENT OF SOME "COLICS" BY SALINE SOLUTION AND FORMALIN (FORMALDEHYDE 40%), ADMINISTERED BY THE STOMACH TUBE.

By W. W. LANG, M.R.C.V.S.
Brigg, Lincolnshire.

Inspired by Professor Imrie, who believes himself to be, if not the first, one of the first, to prescribe formalin internally, also by Mr. E. H. Curbishley's recent paper on "Auto-intoxication complicating serious gastro-intestinal diseases," and by the advocates of hydrotherapy, I tried the above combination for the first time on Christmas Day last. Two days later a communication was received from Professor Imrie stating that he had used the treatment successfully and pointing out an action of formalin, hitherto unknown to me, that of a laxative; ringing the changes on a case of laminitis satisfied me that this view was correct.

The following is a list of consecutive cases, each of which received sod. chlor. ff lb., formaldehyde (40 %) ʒi, aqua gal. viii—only four required a second course of treatment. Any slight variation of treatment is mentioned and where possible a diagnosis is given.

Case (1).—Colicky pains, profuse perspiration; rectal examination revealed well forward and slightly to the right what appeared to be impacted small bowel. Relieved and feeding in 3½ hours.

Case (2).—Impacted cæcum, ill all day. Water passed per rectum in one hour and patient feeding; copious evacuation in two hours. Was the early appearance of water in the rectum due to its inability to get into the cæcum?

Case (3).—Uneasy, hanging back in the stall. Temp. 104° F. Diagnosis doubtful. Feeding shortly afterwards; laxative action in 12 hours. Recovery.

Case (4).—Examination per rectum revealed impacted double colon. Had been ill and treated all day by owner. Bowels acted normally 3 times in first 2½ hours; patient feeding one hour later; slight laxative action 24 hours; recovery without further treatment.

Case (5).—Generalised tympany throughout the alimentary canal. Steady and prolonged escape of gas from the stomach through the tube. Recovery steady and uneventful; laxative action in 7 hours.

Case (6).—Constipation—whatever that may mean. In-foal mare; no pain. Received a second dose in 24 hours; no further treatment required.

Case (7).—Gastric tympany and colicky pains; rectal examination negative. Steady escape of gas from stomach; recovery gradual; laxative action 7 hours.

CASE (8).—Off feed, temp. 104° F. Doubtful diagnosis. Quite well again and slight laxative action in 12 hours.

CASE (9).—Superpurgation. Had received a pint of linseed oil on two successive days. Usual symptoms with very quick, weak pulse, which was wonderfully improved an hour after treatment. Twenty-four hours afterwards appetite better though fæces still liquid, but lacking the offensive smell. Repeated treatment ; following day appetite excellent and fæces normal.

CASE (10).—Three months previously had been treated for cæcal impaction by hydro-therapy. Rectal examination negative, except that small colon contents appeared to be dry. Received the usual treatment but was reported no better two days later. Treatment repeated ; one hour and a half later an additional nine gallons of water were given—total 17 gallons. Bowels acted freely during the night and recovery uneventful. This animal had been thin for 5—6 years, but is now quite fat.

CASE (11).—Colicked at market. Treatment as usual. Free from pain in 2 hours and started for home 8 miles distant. Appetite normal on arrival ; laxative action 20 hours.

CASE (12).—Down but not in violent pain. Pulse 80 and very weak ; temp. 105° F. Diagnosed auto-intoxication and treated accordingly, giving in this case, however, only 4 gallons of water. Three hours later pulse 60, temp. 102° F. Following day, pulse 50, temp, 102° F., so repeated the treatment, giving in addition this time arecoline-hydro-brom. gr. i. No further treatment required ; this horse in present owner's hands had always drunk very little water.

CASE (13).—Uneasy. Off feed ; pulse 60, temp. 103.4° F. Feeding in 4½ hours ; laxative action 12 hours.

CASE (14).—Rolling about, profuse perspiration, tympanitic, diarrhœa, pulse 80, temp. 102.2° F. Failed to find anything abnormal per rectum. After receiving 3 gallons of fluid the patient threw herself on the floor. Had not anticipated this, as gas had freely eructated through the tube ; re-inserted tube into the stomach and withdrew all fluid ; repeated this with one more gallon. The whole of 8 gallons plus medicinal agents then passed on ; twenty minutes later pulse 58 ; laxative action in 12 hours. Afterwards reported feeding and working all right—rather doubtful.

Sequel.—Attack recurred 9 days later ; no tympany ; no obstruction to flow of fluid through the alimentary canal ; rectal examination negative, except tenderness on the right and dry condition of fæces in the small colon. Repeated the treatment in 2 hours ; death following morning. Post-Mortem revealed almost complete invagination of the

cæcum, with an inflamed, necrosed and ruptured area near the base; badly infested with strangles.

Assuming that this case, the first seen by the writer, could have been diagnosed, could it have been successfully treated by hydrotherapy? Case No. 10 did not respond in the first instance but did when given 17 gallons, the first 8 of which were cold water, as warm was not available. One wonders whether he had a somewhat similar condition.

If we exclude case No. 14, the only fatal one, we find that only four required a second course of treatment. Also, the experience gained appears to indicate that one can ignore any other medicines given, whether anodyne or purgative, and that the treatment is safe for in-foal mares. One of the earliest signs of improvement apparent to the layman is the return of the appetite, which soon approaches and remains normal—there is no nausea whatever. A slight laxative action takes place at varying intervals, after which the patient is fit for work if required. On the whole it appears to be a very kind and safe form of treatment, and in the writer's opinion bids fair to oust all other methods.

General Remarks.

On considering the above treatment all sorts of questions present themselves, beginning with the old query:—What is colic? Also, what are its concomitants? We are told of two—"disordered nervous action" and "disordered muscular action." May we think there is another, viz., more or less arrested glandular secretion? Without this secretion one can readily imagine the alimentary contents of the horse throughout to be nothing other than putrefying vegetable matter, whereas we are told that bacterial disintegration takes place in the large intestines. Here one may ask to what extent this is influenced by the secretions in the preceding part of the canal? On the other hand, we know that many colics subside long before what we believe to be the offending material is evacuated.

What principles are involved in the treatment given above? We are told that sodium chloride "increases secretion of saliva and gastric juice, furnishes hydrochloric acid for the gastric juice and soda salts for the bile," in other words, increased glandular secretion. There is also in the writer's experience a very decided anodyne effect obtainable from the administration of a large quantity of saline solution. Then we have an exosmotic, diluent and preservative action; this last can be proved by the simultaneous administration of either linseed oil or aloes and saline—and this action remains for days after a course of saline treatment.

The formalin was originally given with the idea of its acting as an

intestinal antiseptic, but it must be too highly diluted for that. Its virtue may lie in its laxative action in combination with the saline. The author has given ℥i three times a day in water, gall. iv., but whether it has then any antiseptic action is not known. At any rate, the patient gained weight.

LARYNGEAL FISTULA.

By MAJOR J. R. HODGKINS, D.S.O. F.R.C.V.S.
Secunderabad, India.

This sequel to the operation for roaring is apparently very rare.

It is mentioned by Dollar (Regional Surgery) as occurring occasionally.

No instance of it happened amongst the very many animals that the writer has previously operated upon, nor has a case come under his notice.

The subject of the present note was an imported English hunter mare, which, at the request of the owner, was operated upon for roaring.

The operation was simple and the wound healed perfectly up to about the fifteenth day.

After this stage a slight but constant purulent discharge was present from a small orifice leading into the larynx. This would yield to no treatment and carried on the case to the seventh or eighth week. It was then decided to open up the larynx, and to recommence the healing process. The sac was found perfectly obliterated and no reason was discovered for the fistula. The very greatest care was taken in the after treatment of the wound. Again the wound healed splendidly to the stage arrived at previously. It then ceased to heal and the fistulous condition became established. Treatment was carried again into the sixth week without avail. Then, as the discharge was small in amount, it was decided to get the animal fit and work it, notwithstanding the fistula. After a few days at exercise the character of the discharge altered, mucus only being expelled from the opening. At the end of the third week, much to the joy of everyone concerned, the wound closed spontaneously, and the animal is now going very well.

SOME CLINICAL NOTES ON DYSTOKIA OF CATTLE.

By C. PACK, M.R.C.V.S.,
Lymington.

In a fairly wide country practice difficult parturition cases form a rather large percentage of the work, and the causes are in many cases interesting.

Not the least difficult are the monstrosities met with amongst "Kerry" cattle, something very akin to the "Bulldog" as far as the

head is concerned. The size of this, and the frequently unclosed abdomen, makes it often very difficult to extract, whilst the absence of developed limbs does not help to make matters easier.

I think from observation that the bull is more accountable for this condition of affairs than the female.

In a herd kept for show purposes I met with several cases in succession some seven or eight years since.

In time the bull was disposed of and a new strain of blood introduced, and for the last three or four years I have not had a single case in that herd, although the female progeny have been kept for breeders.

I have never met with this condition in any other breed.

Amongst other cases that have implanted themselves on my memory was that of a Guernsey heifer, a first time calver, unable to calve. Examination proved the legs within reach, but no head to be felt anywhere. Securing one of the forelegs, I succeeded in skinning it to above the elbow, and traction then caused the muscles holding the shoulder-blade to give way. More room enabled me to reach the head and secure it ; the calf was then drawn—not at all a difficult case, and the heifer did well.

The next year I was called to the same animal and for the same reason. Examination this time revealed a very different state of affairs, and although the animal had been in labour for some hours I had the greatest difficulty in inserting my hand through the opening to the womb. It appeared to be a large fibrous band in front of the *os*, only just large enough to insert the hand flatwise. The opening then took an upward direction into the womb, and I could feel a foot. I removed the limb in the same manner as on the previous occasion, but that was all of the calf I could extract. I smeared the part with belladonna extract, and as she was fairly strong I left it till next day, but again met with no further success.

I tried day after day, and in time putrefaction set in and I was enabled to get the head and the cervical vertebræ, piece by piece, when matters came to a standstill. Hoping that it might come away in portions, beyond syringing the uterus with disinfectant to lessen the odour nothing more was done. The appetite continued fairly good, and she came into milk. In due time all discharge ceased. No bones were ever known to be passed, and she was sold as a " barrener." The wonder to me is that she survived such a mauling, as others with a twentieth part of such treatment throw up the sponge.

I conclude that the condition at the entrance to the womb was the result of some injury at the previous calving causing thickening and constriction of the parts.

An interesting case of extended pregnancy or delayed parturition occurred in a large heifer of the Gloucester breed, a *prima para.*

About the time she was due for parturition, milk appeared in a well-developed udder, and she gave every indication that she would calve to time.

No calf appeared, however, and, as she was not milked, the milk dried up. The heifer then began to come *in œstrum* regularly, and I was called in for an opinion.

I almost blurted out that the heifer must have aborted and they had failed to notice it, but decided to examine first. The entrance through the vagina was easy, and the mouth of womb closed and normal. Upon examination *per rectum* I could distinctly feel a calf. I advised leaving her to nature, and said I would see her a week later. I did so, but found no change. Two or three days after my visit I received a telegram to say that the heifer was *in œstrum* again, and that perhaps an examination would now be easier. I attended again, with the same result as before. The next day I received a telegram to say the heifer was straining very hard, and asking me to come at once. I attended again, and found that the animal, with some assistance from the dairyman, had succeeded in passing the calf alive; it had, however, died shortly after. This was exactly three months after the date she should have calved, according to the date of service.

No milk appeared in the glands, and the animal was fed for the butcher.

Another case that puzzled me was a small heifer that came into milk when she should have calved, but as the owner was not very certain of the date of service she was left for a week or two, and as in the former case, the milk dried up.

Examining the heifer I found it to be a case of torsion of the womb. I proceeded to try and straighten matters out by casting her and rolling, but to no purpose. It did not matter which way I rolled her my hand was a tight fit. In the end I advised the owner to destroy her. This was done at once, and a post-mortem made, when I found she had been the subject of peritonitis, and that very extensive adhesions of the peritoneal surface of the womb to the surrounding tissues were present. This explained why I was not successful in my attempts, as the womb was a fixture and went with the body as she was rolled over.

RUPTURE OF THE UTERUS IN THE COW.

By LESLIE P. PUGH, B.Sc., F.R.C.V.S.,
Sevenoaks.

Case 1.—A Jersey cow with great difficulty gave birth to her fourth normally-presented calf. Eight hours after she was noticed to be staggering, and veterinary advice was sought, as milk fever was

feared. On examination, the cow showed some of the features of this condition. Her temperature, however, was 105° F., she was sweating freely, and about every five minutes she strained violently. Inflation of the udder with oxygen was carried out, and the fœtal membranes then removed. An antiseptic pessary was being placed at the distal end of the right uterine horn, when a rupture of womb was discovered and a large loop of bowel strangulated within the cavity. On touching the same the cow strained violently. Two ounces of chloral hydrate were administered and two c.c. of pituitrin hypodermically. The hand was reinserted into the womb after fifteen minutes, and by careful manipulation the bowel was worked back into the abdominal cavity. The rupture was then found to be large enough to easily admit the hand. Contraction of the uterus proceeded so rapidly that the whole arm was gripped by its walls before being withdrawn. The following day her temperature was 102.8° F., and she appeared dull. Within five days she was milking four gallons daily, and she made an excellent recovery.

Case 2.—A Guernsey cow appeared dull the day following the forced extraction of her first calf. On removing the fœtal membranes a rupture of the roof of the body of the uterus was discovered. After carefully cleansing the womb and mopping dry with antiseptic gauze, a pessary was inserted. Her temperature during the subsequent week did not register above 102.5° F. She, however, persistently refused to feed or drink, and was forcibly fed on gruel and old ale. On the eighth day she died suddenly. Post mortem revealed a perforation of the rectum above the uterine rupture, and this had allowed leakage into the perineal region. The womb had contracted well, and the cow would most probably have made a good recovery if the second injury had not occurred.

CUTANEOUS ŒSTRIASIS IN THE DOG.

By M. H. SOWERBY, M.R.C.V.S., I.C.V.D.,
Bombay Veterinary College, India.

A DOG suffering from a wound on the scrotum was admitted as an in-patient of the hospital in connection with the Bombay Veterinary College on November 2, 1920. No history of the case could be obtained, as the owner did not bring the dog personally, but sent it by a coolie, accompanied by a short note to the effect that if it were curable it might be kept in the hospital, and if considered incurable, destroyed. The dog was not a valuable one, and the owner appeared to be very little interested in it, or perhaps, as seems likely from subsequent developments, the case had been under treatment for some time elsewhere and he was tired of keeping the animal.

About seven days after the dog's admission to the hospital a small

swelling appeared on another part of the scrotum, and turned into an abscess in about a week, and when this was opened two or three dead larvæ were found in the evacuated pus. At irregular intervals four more abscesses formed, each following the same course, the first three being on the inside of the right thigh, while the last one, which was opened on December 29, 1920, was on the abdomen, just in front of the penis. These abscesses did not point in the usual manner, but showed a small black spot of necrotic tissue on the surface. My attention was not drawn to the presence of the larvæ by the surgeon in charge of the dog wards until the last abscess was opened on December 29, and I therefore had no opportunity of suggesting that the swellings should be incised earlier in the hope of obtaining living larvæ.

The larvæ obtained on opening the last abscess have degenerated considerably, and their characteristics are not definitely shown. They are 15 mm. long, and appear to be composed of twelve segments and are probably larvæ of Dermatobia Cyaniventris.

CYSTIC CALCULUS IN A FOX-TERRIER DOG DIAGNOSED BY *X*-RAYS.

By J. F. D. TUTT, M.R.C.V.S., F.R.M.S., F.Z.S.,
Winchester.

THE patient was an eight-year old fox-terrier dog.

History.—There had been difficulty in micturition extending over a long period. A little blood was passed at times, and micturition was often accompanied by pain, and it was also noticed in the early stages that if the flow was interrupted and the dog shifted its position the flow re-started. This symptom is analogous to that sometimes seen in the human subject in the early stages of calculus formation, the reason being that at this stage the calculus, being small (about that of a pea in size), it tends to be carried with the flow of urine to the urethral exit from the bladder, thus blocking it. Movement often dislodges it, and the flow is resumed.

Treatment prior to X-ray.—The owner stated that the dog had been treated with various remedies for some time, and on a course of Hexamine (*Hexamethlyenetetramine*) a slight improvement was noted. This was transitory, so admission to hospital supervened. Under morphia I was unable to pass the catheter beyond the prostate gland, which could be felt enlarged by rectal examination. It was then thought that this might be the trouble, and a course of potassium iodide was prescribed, and for about three weeks there was a distinct improvement.

This, however, was again transitory, and it was decided to have an *X*-ray examination carried out, and if positive to remove the calculus.

This was carried out by Dr. F. F. C. Jagger, and was positive. The accompanying skiagraph shows the calculus, that of the posterior view being very distinct, where the calculus is plainly visible above the enlarged prostate gland. The vision was, however, much more distinct on the screen. Prior to examination, fasting for 24 hours, with a strong purgative, was carried out. This is essential to empty the bowels, or fæcal matter will " mask " the image and lead to error.

Operation.—The patient received one grain of morphia subcutaneously, and an hour afterwards was placed on the operating table on its back and the supra-pubic area shaved and painted with iodine.

A great disadvantage occurred through being unable to pass the catheter. An incision was made through the skin at the left side of the penis, and through the median line.

The bladder was carefully raised and drawn upwards through the incision, and packed round tightly with sterilised cotton wool to obviate escape of urine into the peritoneal cavity.

The bladder was found to be in a state of acute cystitis, and was incised longitudinally down its centre.

Forceps were inserted, and a calculus the size of a walnut, and weighing 2 drachms 9 grains, removed. After carefully washing out the interior the edges were sutured in the usual way with Lembert sutures, and the skin and abdominal incisions closed by means of interrupted sutures.

A CASE OF THE TRANSMISSION OF SARCOPTIC MANGE FROM DOG TO MAN.

By W. H. COATES, M.B., M.R.C.S., L.R.C.P.
Medical Officer of Health, Patrington, E.Y.

I HAVE recently been reading the lecture given before the Royal Society of Medicine (February 3, 1921) by Professor Hobday upon "Some Diseases of Animals Communicable to Man," and I noticed, amongst others, that canine sarcoptic mange was mentioned. This recalled the fact that, some five years ago, myself and wife, my son-in-law and daughter, and two grandchildren developed this complaint on the lower part of the legs. Only one member of my family escaped, and she never touched the dogs. We caught the contagion from a pug dog, who used to be continually rubbing against our legs in front of the fire.

The rash lasted about six or eight weeks, and was extremely irritable. It was much like lichen planus. My medical colleagues were for some time sceptical as to the cause, but a veterinary colleague, whom we called in to see the dog, diagnosed its ailment as sarcoptic mange and eventually cured it. I myself was convinced at the time that we caught the infection from the dog, and am of opinion that this subject of the diseases of animals communicable to man should receive much more attention in our college curriculum.

ENTEROTOMY FOR A STONE IN THE INTESTINE.

By FREDERICK HOBDAY, C.M.G., F.R.C.V.S., F.R.S.E.
(*London*).

ON the 30th of December, of last year, I was consulted by Mr. Wm. Roach, F.R.C.V.S., of Exeter, in regard to a black Pekingese dog (male), 5½ years old, which had (to quote Mr. Roach's own words), "a foreign body in the abdominal cavity in the right lumbar region posteror to the kidney. It can be distinctly felt on examination per rectum, and is freely movable. The action of the bowels and kidneys are normal, and the appetite almost invariably good, but sometimes he is restless and in pain. Occasionally vomiting occurs after taking fluid. Otherwise the little animal is fairly lively although obviously becoming thinner. I enclose an X-Ray photograph, which

shows the foreign body distinctly." The history, as obtained from the owner, was as follows :—

" The dog was left apparently in the best of health, at the age of four, with my gardener's wife for a year and a half.

" He had a habit of swallowing stones, but always vomited them up a minute or two afterwards.

" When he returned to me last July, he continually threw up yellow froth every few days, and seemed restless and uneasy at times.

" He did not throw up his food. He swallowed stones once or twice, and was given an emetic of warm water and salt, which immediately had the effect of bringing them back.

" The dog was taken to Cornwall during the month of September, where he seemed particularly well and went for long walks. He seemed in perfect health and spirits.

" He appeared to be very heavy in weight, and I wondered if this was attributable to any condition that was not quite normal.

" At the end of September I noticed that immediately after drinking water he made a whimpering noise as if he was in pain, and as something appeared to be wrong I took him to a veterinary surgeon, who, however, could tell me nothing. He examined the dog internally from the rectum and said he did not like the signs he found.

" Beyond that he gave me no advice whatever.

" I then took the dog to a man in Torquay, who made a very careful examination and said the dog was suffering from gastritis. He gave a dose of calomel, which undoubtedly did the dog good at the time, and which brought away a large amount of bile. The eyes got clearer, and the yellow look disappeared, but his weight went down immediately, and he became thin.

" He did not easily retain his food three months ago, and it was only by the most careful and gentle feeding that he seemed to live at all. We gave him invalid food, such as Benger's, Brand's Beef Essence, etc.

" His spirits were gone. He appeared ill and disinclined to walk, but nothing seemed wrong, that we could ascertain, with either his bowels or kidneys, both of which acted normally.

" The dog gradually became stronger and lives principally on scraped raw beef, with sardines in their oil for the morning meal.

" He does not vomit up his food, and he has been given as little liquid as possible, as undoubtedly at the beginning of his illness it did not suit him. At first he used to like to lick ice. Immediately water or any other liquid is given to him he whimpers as if in pain.

" About two months ago I discovered a swelling or lump low down on the right side, near the groin, and attributed the trouble to this.

"The dog walks slowly and as if in discomfort. For about four or five days he eats well and appears to be going on allright, but he takes bad attacks, refuses food, becomes restless, uneasy, and evidently in pain and discomfort. This generally begins with a bad night of uneasiness, and after a few hours he vomits up, not food, but a most evil smelling dark liquid.

"The lump or swelling appears to shift about. It appears to get across the lower part of the body, sometimes right on the other side, and sometimes it seems right between his ribs.

"A fortnight ago the dog appeared to be brighter, and though very thin at the time, he seemed to be putting on weight. I attributed this to his being able to take a little liquid, such as peptonised milk, but I imagine this was distention, as last Sunday he brought back quite half a tumbler of the foul-smelling liquid again."

I saw the patient at Plymouth on the 12th of January last, and after a complete further examination by Mr. Roach and myself, we decided to make an exploratory laparotomy, having everything prepared for an enterotomy if necessary. The foreign body was freely movable and could be distinctly felt in the iliac portion of the small intestine. The anæsthetic used was chloroform, and the usual antiseptic precautions were taken with the instruments and the skin of the abdomen; the latter not being washed at all but merely shaved dry and painted with Tr. Iodi. Laparotomy was performed through the median line, and the portion of small intestine containing the foreign body brought outside the abdomen.

An attempt was made to press the foreign body along the intestine, but it was firmly jammed, and to move it was impossible without exerting undue force, which might have ruptured the bowel.

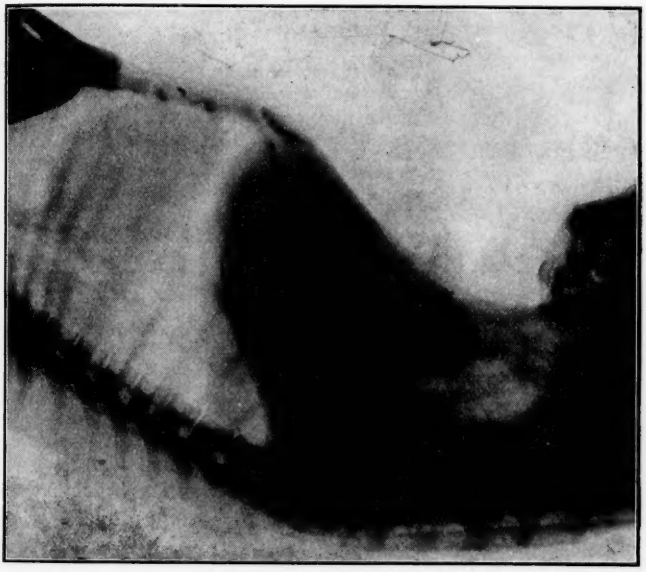
A site for incision was chosen directly over the foreign body, and as far away from any bloodvessels as possible, the incision being made longitudinally.

The foreign body, which proved to be a stone, was then easily removed, and the wound in the bowel, after being carefully cleansed with antiseptic, was closed with Lembert's pattern of sutures in fine silk, round milliner's needles being used. The abdominal muscles were sutured with silk, and the skin with silkworm gut.

No food was given by the mouth for the first forty-eight hours, predigested meat suppositories (B. W. & Co.) being given every four hours instead; a dessertspoonful of water being allowed by the mouth every four hours too.

At the end of the second day, 60 drops of Bovinine were given every four hours, licked off a lump of ice. This was varied with a

little milk, but no solid food was allowed by the mouth for a week. At the end of this time the patient was permitted to take a little sponge cake and sheep's brain alternately, and in ten days, except for a little weakness and the presence of a suture abscess, he was well on the way to convalescence. At no time was there ever any fever to cause alarm, and except for a little minor suture trouble, progress was uninterrupted, and the patient, thanks to the constant night and day care and good nursing given by a devoted owner, and her (if possible) still more devoted maid, made a most excellent recovery.



The stone weighed three-quarters of an ounce, and for the skiagraph I am indebted to Surgeon Rear-Admiral Sir D. McNabb, K.C.B., F.R.C.S. That it must have been swallowed in September is proved by the fact that it was of a variety found on the seashore of the part of Cornwall to which the dog was taken. None of that variety of stone exists in or near the owner's home in Devonport or Plymouth. It must therefore have remained for fully three months in the stomach, causing the slight gastritis and restlessness observed, and then one day have passed through the pyloric orifice into the intestine, where it eventually jammed and caused the obstruction.

Abstracts.

ABSTRACT FROM THE GOVERNMENT OF INDIA ARMY DEPARTMENT.

ARMY INSTRUCTION (INDIA).
No. 1007 of 1920.

DELHI,
14th December, 1920.

1007. FORMATION OF ARMY VETERINARY CORPS, INDIA.

The Right Hon'ble the Secretary of State for India, has approved, in principle, the formation of an Army Veterinary Corps, India, which will combine in one organisation all personnel employed in the veterinary supervision of the animals of the army in India and engaged in their treatment.

2. The corps will eventually include and absorb :—

(*a*) The establishment of officers, Royal Army Veterinary Corps, serving on a tour of Indian service.

(*b*) The British warrant and non-commissioned officers of the Unattached List, Indian Veterinary Corps.

(*c*) The veterinary assistants of the Indian Veterinary Corps, and those serving under agreements extra to establishment until absorbed or otherwise disposed of.

(*d*) The veterinary establishments of veterinary hospitals of remount depots.

(*e*) The veterinary establishment of the Cavalry School at Saugor.

(*f*) The clerical establishment of the Army Veterinary Service in India (provisionally).

4. The other rank personnel of the Corps will be divided into sections, each section being organised as a complete unit to deal with 250 sick animals. The establishment of a section is given in appendix I.

8. Each section will be under the immediate command of an officer, Royal Army Veterinary Corps, who for purposes of discipline and finance will be the Commanding Officer of the section.

Officers, Royal Army Veterinary Corps, appointed to stations or depots where detachments are located, will command such detachments subject to the control of the Officer Commanding the section.

9. Each section will be administered by the Deputy Assistant Director of Veterinary Services of the formation to which the section

is allotted, or in whose area it is situated. This will also apply to those sections or detachments allotted to veterinary hospitals of remount depots.

Similarly the allotment and distribution of veterinary assistants will remain as at present.

13. Two depots, Army Veterinary Corps, will be arranged, one at Ambala to supply units of formations in the Northern and Eastern commands, and the other at Kirkee to supply units in the Western and Southern commands. They will be affiliated to the station veterinary hospitals (class 1) of those stations, and the personnel of the hospitals will form the working staff of the depots. The depots will also have the advantage of the army veterinary schools at Poona and Ambala respectively for assistance in training.

A. SHAIRP, *Colonel,*
Offg. Secretary to the Government of India.

Review.

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON.

In the last publication of the Proceedings of the Zoological Society of London there are several matters of interest to the profession. One is a paper on " The Life History and Habits of the Yellow Dung Fly (*Scatophaga stercoraria*) : a Possible Blow-fly Check," by G. S. Cottrell, Esq., with a preface by Professor Maxwell Lefroy, F.Z.S. This is an account of work undertaken to complete an inquiry into blow-fly control, in the hope that it might be possible to utilise the yellow dung fly as a check on the blow-fly in places where this latter is a serious sheep pest.

The manner in which the yellow dung fly grasps its prey, stretching the neck of its victim and puncturing a distinct hole through it, cutting or otherwise damaging the nerve cord so as to cause partial paralysis, has been observed. It has been found that this fly attacked and destroyed as many as a dozen blow-flies (*Musca domestica*) a day in the laboratory, where these were used almost exclusively as food.

In the open the yellow dung fly would not, probably, keep up this record, as under natural conditions a great article of its diet appears to be the small Borborid fly, in addition to other Diptera which are not endowed with fast flight. It appears, however, that it specially attacks the Musca and the Calliphora.

With regard to the possible economic value of the yellow dung fly as a destroyer of the blow-fly pest of sheep, Prof. Lefroy says : " The species seems to have much value in this connection, and its habits as a maggot and an adult are so harmless that it is to be hoped it will eventually be made use of."

Mr. Cottrell has studied the question of the best means of transporting the species to localities and countries where the blow-fly is

a serious sheep plague. This has not been possible as yet, but the difficulties attending it will, no doubt, be eventually overcome.

Another important paper which appears in the same publication is one by Prof. C. L. Boulenger, in which he describes two new Filarii worms.

I am forwarding the publication to the library of the Royal College of Veterinary Surgeons in order that it may be available to those who wish to refer to it.

HENRY C. WILKIE, F.R.C.V.S., F.Z.S.

Parliamentary.

Question.—Colonel Sir Arthur Holbrook: To ask the Secretary of State for War whether the two Major-Generals of the Royal Army Veterinary Corps who were stated, in the reply given on July 13, 1920, to be employed in Colonels' appointments, will be retained on the active list after they reach the age limit for Colonels of the Royal Army Veterinary Corps, which these two officers reach on May 24 and July 3, 1921, respectively; if so, how the effect on the promotion of officers junior to them will be adjusted, seeing that many of these junior officers performed equally good service, probably under more trying climatic conditions; and if he has considered the effect that the retention of these two Major-Generals would have on the promotion of a very large number of officers junior to them in the Corps.

Answer.—Colonel Sir Arthur Holbrook. Thursday, February 17, 1921. Sir L. Laming Worthington-Evans: It has been decided that the two Major-Generals, Royal Army Veterinary Corps, employed in Colonels' appointments, shall be retired on reaching the age of 57, the age limit of Colonels of the Royal Army Veterinary Corps.

EXPORTATION OF HORSES' ACT.

SIR J. GILMOUR, in answer to a question in Parliament, stated that at the request of the French Government the Minister of Agriculture has nominated eighteen veterinary surgeons to examine the animals and their carcases prior to export.

THE Royal Society for the Prevention of Cruelty to Animals has approached the King of the Belgians and the Belgian Prime Minister, asking that the Belgian Government will do likewise.

Personal.

THE first Reunion Annual Dinner of the Royal Army Veterinary Corps Old Comrades' Association is to be held at 6.30 p.m. on Friday, April 29, when the chair will be taken by Major-General Sir T. Layton Blenkinsop, K.C.B., D.S.O. Tickets, 7s. 6d. each. Morning dress. Apply to the Secretary, R.A.V.C., Veterinary Records Office, Woolwich Common.

Correspondence.

THE CAUSE OF THE "NOD" WHEN WALKING.

To the Editor of THE VETERINARY JOURNAL.

What is the cause of the "nod?" This question has been asked by Major-General Sir F. Smith in the March number of the VETERINARY JOURNAL. It is interesting, especially to one whose time is largely occupied in studying the anatomy of the horse, to try and find out the muscular mechanism which brings about the ordinary movements of locomotion in the horse, and to note the parts played by various muscles in the different gaits. Many of the movements are very complex, and it is extremely difficult to say what really does happen in the musculature, hence, in commencing the study of movement one must try to analyse the simpler movements and component parts of action, such as the nodding of a horse's head in walking.

This slow and easy nodding, with a slight swing from side to side, is, I am sure, nothing more than a rhythmical pendulous movement of the head and neck, assisted, though not altogether brought about, by the action of the extensor muscles of that region—the complexus, splinius, frachelo mastoideus, rectus capitis posticus major, and obliqus capitis inferior—the swing of the head upwards so counteracting the action of the mastoido humeratis which tends to, and finally does, cause the head and neck to swing downwards again, and in this way the natural pendulous swing of the head assists muscular action and lessens the expenditure of energy.

In trotting the limbs move much more quickly, and because of the length of the neck there is not sufficient time in the making of one step for this natural swing to take place, a nod could only occur by the expenditure of considerable muscular energy in hastening the pendulum swing, and so less energy is expended in fixing the head and neck in a certain habitual position for the action of the mastoido humeratis in raising the shoulder.

The question seems to me purely a matter of physics and efficiency in the utilisation of energy, and it would be interesting to note whether the giraffe, with its long neck and necessarily slow head swing, had educated itself up to this "nodding" when progressing at a very slow walk.

E. L. TAYLOR,
2nd Year B.V.Sc. Student.

Liverpool University.

SPLITTING OF THE SOFT PALATE.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—In reading over an article by Major-General Frederick Smith in the February issue of the journal, I notice that splitting of the soft palate is referred to as a new operation. This operation which we have always called staphylotomy, has been performed on this side of the Atlantic for about twenty-five years. It is described in a small manual published by Professor W. L. Williams in 1900, but had publicity in current journals for some years previous.

It is recommended here for pharyngeal explorations, and has been resorted to in several reported cases for evacuating collections in the guttural pouches.

We perform the incision with a curved, hook-shaped knife ferruled to the third finger. The mouth is opened very wide with a mouth speculum that engages the incisors and the knife-armed hand is passed behind the posterior border of the velum and then by a forward movement the incision is made back to the palatine bone.

There is some danger of a large hand tearing the pillars of the fauces as the space is quite narrow. The large hand should therefore be lubricated. By keeping in the median line there is very little bleeding. As the General stated in his communication, it admits of a splendid examination of the whole pharynx, eustachian tubes, guttural pouches, larynx, œsophogeal infundibulum, etc.—Yours faithfully,

L. A. MERILLAT.

Chicago, U.S.A.

NOTICES.

All communications should be addressed to 8, Henrietta Street, Covent Garden, London, W.C.2. Telephone: Gerrard 4646. Telegrams: "Baillière Rand, London."

Letters for the JOURNAL, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements) should be addressed to the Editor.

Manuscript—preferably typewritten—should be on one side only of paper, marked with full name of author.

Illustrations for reproduction should be in good black or dark brown ink on white paper or card.

Copy for advertisements should be in the hands of the publishers—Baillière, Tindall and Cox—not later than the 25th of the month, or if proof is required not later than 23rd.

Annual Subscription for the British Empire, 21s. ($4.00) post free; or combined subscription with the "Veterinary News" (weekly), 35s., post free.